

## J. F. KELLER STARTS NEW LECTURE GROUP

Second Series of Season to  
Cover the Chicago District

On the day that this issue of the REVIEW goes into the mails, Prof. John F. Keller will present his first lecture on Steel and Its Treatment before a group of Milwaukee industrial men. This is the beginning of Prof. Keller's ninth group of extension lectures presented under the joint auspices of Purdue University and the American Society for Steel Treating. These courses have been presented to groups of men from the Atlantic to the Pacific and in all cases they have been accepted with a spontaneous enthusiasm as being most unusually practical and instructive.

The directors of the A. S. S. T. have succeeded in prevailing upon Dean Potter of Purdue to grant Prof. Keller a year's leave of absence so that the members of the society may have the privilege of hearing Prof. Keller deliver more of these talks.

The present group of lecture cities includes Milwaukee, Chicago, Minneapolis, Rockford and Harvey, Ill. In each of these cities Prof. Keller has been greeted with enthusiasm by those with whom he has contacted in making the necessary arrangements for meeting rooms and the like. His reputation has preceded him and a response in the form of a large group of men attending in each of these cities is expected.

As evidence of the value of these courses to men in industry it is important to note that the first series of lectures Prof. Keller gave this year was in the Ohio district in the cities of Mansfield, Canton, Erie, Lorain and Cleveland, with a total enrollment of 353. The group at Lorain was made up of men from the National Tube Co. and constituted the largest single group that Prof. Keller ever lectured to. This group of 431 was sponsored entirely by the management of the National Tube Co. and was preceded by two smaller sized groups last year in Elwood City and McKeesport, Pa.

The directors of the A. S. S. T. believe that these extension lectures as given by Prof. Keller are fulfilling a great need in the industry and feel that the society is especially fortunate in being able to secure such an able man to carry on this work.

These Engineering Extension lectures are intended to assist all of the members of the production forces in the metal parts and tool industries by giving them a better understanding of the basic principles concerning the effect of fabrication (working) and heat treatment upon the physical properties of iron and steel.

A fundamental knowledge of the "why" for these causes and effects will greatly assist in furnishing the production officials and the mechanic with reliable information as to the causes for many of the good as well as the undesirable characteristics of metal. The lectures assist in developing a better working knowledge for the supervising staff and its men, which in the end will naturally result in greater efficiency of the production personnel and the product thereof.

## A. S. S. T. TO GREET BRITISH

Metal Men from England Here in 1932,  
Will Visit Society's Convention

The American Society for Steel Treating has been invited to co-operate with the Iron and Steel Division and the Institute of Metals of the A. I. M. E. in entertaining the party of English metal men, members of the British Iron and Steel Institute and Institute of Metals, who will visit the United States in 1932. The provisional schedule of entertainment for the Englishmen includes visiting the National Metal Congress and Exposition which will be in session at Detroit the week of September 19th, 1932. The visitors will register at the exposition, and will have two days to attend technical sessions, see the show, and attend a dinner which will be given in their honor.

The party, according to present plans, will arrive in New York on September 10th and will visit in the east and middle west until September 30th, when they will sail from Montreal. A special train will be provided to carry the British guests from one metal center to another.

## Headquarters for Western Metal Congress



## T. D. LYNCH TALKS AT PHILADELPHIA

Former President of A. S. S. T.  
Tells Metallurgy Developments

By A. O. Schaefer

The first regular meeting of the Philadelphia chapter for the 1930-1931 season was held on Friday, October 3rd, at Temple University.

About 70 members and guests gathered in the gymnasium and did full justice to the oyster supper provided. Over the cigars and coffee, State Senator Bertram G. Frazier of Philadelphia, swapped a few yarns and cheered us up on the business depression.

A short time was allowed the chapter to inspect the laboratories of the metallurgical course at Temple; and again those of us unfamiliar with the progress made by our course, were struck with the completeness of our equipment.

The speaker of the evening was T. D. Lynch, consulting metallurgical engineer of the Westinghouse Electric and Manufacturing Company. Mr. Lynch's paper, entitled "Metallurgical Developments," was directed largely to the young man about to start in the field of metallurgy. After depicting the ancient origin of the art and the modern development of the science, he devoted considerable time to the subject of the usefulness of metallurgy in engineering. The mutuality of interests of the shop worker, the research man, the manufacturer and the designer was stressed. The great progress of steel making in the last thirty years and the attention now paid to the physical chemistry of metallurgy is noteworthy. A series of interesting slides showing various types of failures, and their solutions at one phase of manufacture or design, wound up the talk which was a most inspiring one.

In the long discussion that followed, Mr. Peterson spoke of the wide application of better materials at the present day. Mr. Mochel analyzed the word "treatment", and applied it in its fullest sense to steel manufacture. Dr. Patch encouraged the student by pointing out the basic simplicity of the complicated problems arising in every day manufacture. Mr. Adams stressed the interest manifested by the steel maker in improving his product.

After according Mr. Lynch a rising vote of thanks for his most provocative discussion of the present-day status of the field of metallurgy, the meeting adjourned.

## CASE GROUP ELECTS OFFICERS

The Case group of the Society, comprised principally of students of metallurgy at Case School of Applied Science, Cleveland, has elected F. P. Whalen as chairman and W. B. Scott as secretary-treasurer. The group has more than 20 student members, exclusive of those from the faculty.

## 50 MORE NEW MEMBERS, NET, MAKES A. S. S. T. TOTAL 6188

Enrollment Now at All-Time Peak

Fifty was the net increase in A. S. S. T. membership from October 1 to Nov. 1, 1930. Thus was continued the steady growth of the society. Membership now totals 6188.

In Group 1 the Pittsburgh chapter climbed into second place ahead of Detroit. Group 2 showed no change, but in Group 3 Rochester took seventh place from Rhode Island and Southern Tier and Springfield changed places. The ranking on November 1:

1  
Chicago  
Pittsburgh  
Detroit  
Cleveland  
New York  
Philadelphia  
Boston

2.

New Jersey  
Los Angeles  
Golden Gate  
Hartford  
Milwaukee  
Lehigh Valley  
Buffalo  
Montreal  
Cincinnati  
Canton-Mass.  
St. Louis  
Dayton  
Syracuse  
Indianapolis  
North-West

3.

Ontario  
New Haven  
Worcester  
Tri-City  
Washington  
Schenectady  
Rochester  
Rhode Island  
York  
Columbus  
Rockford  
Southern Tier  
Springfield  
Notre Dame  
Fort Wayne

## WESTERN EXPOSITION AND CONGRESS PLANS MATURING AS APPOINTED TIME APPROACHES

More than 60 Firms Have Already Agreed to Exhibit In  
What Promises to be a Great Metal Display

More than 60 firms have already agreed to exhibit in the National Western Metal and Machinery Exposition which will be held in the Civic Auditorium of San Francisco, September 16 to 22, 1931. The exposition this year promises to equal the one in 1929 both in size and interest and the co-operation on the part of west coast metal men is reported. This co-operation is evidenced by the unusually large amount of space contracted for three months before the show.

## BINDERS FOR METAL PROGRESS COPIES MAY BE AVAILABLE

First Suggested by Readers

The beauty of the past several issues of *Metal Progress* has caused several members of the Society to write in to the National Headquarters to inquire about facilities for binding the book.

Acting upon this suggestion, investigation was made into various bindings and after consulting with authorities it was decided that a leather grained binder, colored in silver and black, would be most appropriate. The size of the binder is 13½ by 12¼ inches, which allows enough overhang beyond the edge of *Metal Progress* to prevent ill effects. A simple binding appliance is a part of this permanent cover, which will hold six copies of *Metal Progress*.

These binders will cost only \$2.00 with a slight extra charge for imprinting a name upon the front cover. A coupon is printed elsewhere in the REVIEW to find out how many members are interested in securing such a binder. The low price of \$2.00 can only be obtained when 500 are ordered from the manufacturers.

It will be noted that this coupon is a provisional order and is not effective unless the total orders reach 500 so that the price of \$2.00 is provisional. It is suggested that those who wish to purchase these binders send in their orders immediately.

## PLAN SIX-CHAPTER MEETING

Rochester Chapter to Act as Host at  
Two Day Meeting in April, 1931

Plans are already under way for the joint sectional meeting tentatively set for two days in the last week of April, 1931, of the Buffalo, Ontario, Schenectady, Southern Tier and Syracuse chapters, with the Rochester chapter as host for the occasion.

Representatives have been appointed for the various chapters and plans are being developed for the program of technical papers and interesting plant inspection trips.

## METAL PROGRESS GREETED BY FLOODS OF CORRESPONDENCE

*Metal Progress* "is the finest thing we have seen in all of our experience with the business publishing field," wrote the manager of the technical publicity department of a great corporation. His opinion is shared by others who wrote to National Headquarters after *Metal Progress* made its debut.

The editor of a leading journal in the printing industry, whose own publication is a thing of real beauty, said, "I believe it is the most effective magazine that is now, or which has ever been, published in the business field, and from the standpoint of appearance is in the class of 'House and Garden' and such publications."

But the beauty of *Metal Progress* is not the only quality that was commended. A consulting industrial publicist believes that the editor is "to be congratulated upon the quality of the editorial material as well as the attractiveness of the typographical make up."

"... a high point of reader interest," is a New York engineer's estimate of what the magazine achieves. A metallurgist wrote, "it will set a new standard for technical journals." Another metallurgist, a man whose scientific attainments are world-respected, confessed that it was "a real delight just to thumb through the pages."

The superintendent of operating and maintenance of an eastern public utility made this frank statement, "Where I favored very much the size of the old edition, upon reading the new and seeing the changes in cuts and legibility, I think the inconvenience of the larger size is offset."

Advertising is naturally the life blood of publications, and *Metal Progress* has been found good by advertising agency men. An account executive in one large agency wrote, "I hardly feel capable of expressing judgment on the editorial contents, but the layout, typography and general appearance of the magazine are certainly something to be proud of." Said another advertising specialist, "... an outstanding publication."

Honest and valuable criticisms were made in some of the hundreds of letters that greeted the magazine. Both criticism and praise came not from any one class of men, but from many. Technically trained men, salesmen, executives, shop men, control and research technicians, professors, students printers, advertising agencies—all had something to say.

*Metal Progress* has benefited by their opinion.

Plans for the National Western Metal Congress are also maturing. Those in charge of the technical program have not yet released definite information on the papers which will be presented but are willing to be quoted that the program will include some unusually fine contributions from nationally known technicians of the metal industry.

The St. Francis Hotel, a picture of which is printed on this page, has been chosen as Congress headquarters during the week of the exposition and meetings. Its attractive location on Union Square, near most of the interesting parts of San Francisco, will make it popular.

Many companies in the metal fields in the eastern part of the United States have agreed to send delegations to California for the occasion. It is expected that the number of eastern men present will exceed the eastern registration at the Los Angeles show in January, 1929.

The REVIEW will later publish stories, further developments, etc., on the National Metal Congress and Western Metal and Machinery Exposition.

A list of the companies who have already agreed to exhibit is printed here-with. As more spaces are sold the names of the exhibiting companies will be printed in succeeding issues.

Continued on Page Four

## WASHINGTON-BALTO.

## HEARS R. S. ARCHER

Learns Use of Pure Aluminum  
and Various Light Alloys

By Stuart E. Sinclair

The first meeting this fall for the Washington-Baltimore chapter was held Friday evening, October 17, at Washington.

After the usual dinner, which was held at the Madrilion, the group adjourned to the auditorium of the Interior Building where the technical session was held.

The chapter was very fortunate in having R. S. Archer from the Aluminum Company of America as speaker of the evening. Mr. Archer's subject, "Progress in Aluminum and Magnesium Alloys" was very well covered. He described a large number of commercial alloys giving their various compositions, heat treatment, and uses.

The subject of rivets was first considered, attention being called to the several factors essential to the production of a satisfactory product. In the heat treatment there is the necessity of holding at temperature for a long enough period to have all constituents in solution, then care must be taken that the quench is accomplished in such a manner that no precipitation occurs. Under ordinary circumstances aging takes place in one day so that the heading process should be done soon after the quench unless the aging is retarded by the use of refrigeration. In such a case heading may be delayed for twenty-four hours.

The class four alloy or four per cent copper was next considered. It is a high tensile alloy, with the disadvantage of poor casting qualities. The properties of tensile strength and elongation can be varied through different aging treatments, the addition of tensile strength being attained at the sacrifice of elongation.

An alloy of good casting qualities was described as containing varying amounts of Si, from 3 to 12 per cent, with a small addition of Mg to act as

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## THE REVIEW

Devoted to the interests of the American Society for Steel Treating

A Review of the Activities of the Chapters and National Organization of the A. S. S. T.

Published monthly by the  
AMERICAN SOCIETY for STEEL TREATING  
7016 Euclid Ave., Cleveland, O.R. G. GUTHRIE, President  
A. ORAM FULTON, Treasurer  
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Subscription \$6.00 a year; 5 cents a copy.

RAY T. BAYLESS ..... Editor  
JOHN G. MAPES ..... Managing Editor

Volume 1 ..... Cleveland, O., October, 1930 ..... No. 5

## X + 500 = TRANSACTIONS

In the equation which serves as a headline for this editorial "X", the unknown, represents the actual number of orders received for the bound volume of *Transactions* which will very soon go on the press. The figure 500 represents the maximum number of books which will be printed in excess of the number of orders. The total number of *Transactions* to be printed, then, is the number of orders received before the book goes to press, plus the limited over-run of 500. This formula will be followed.

It might be well to remark that these 500 copies will be sold at \$5.00 apiece. The cost of each copy ordered before November 15 is \$2.50, which is quite a bit less.

*Transactions* as a bound volume brings to you quickly and completely reports of the papers presented at the Society's conventions, together with verbal and written discussion in full. Where formerly it took about nine months to reprint every convention paper, now only three months after the convention *Transactions* is ready for you. Technical papers are thus served to you while they are hot.

You will like *Transactions*. It is quite probable that you will actually need *Transactions*. The over-run of 500 copies is small compared with the number of members in the Society. Avoid embarrassment and possible disappointment by ordering a copy for yourself now. A coupon for ordering is printed on another page.

## COOPERATION THAT PAYS DIVIDENDS

The success of Prof. Keller's courses this year, as before, in large measure reflects the cooperation of local A.S.S.T. chapters and other organizations such as chambers of commerce, manufacturers' associations, engineering societies and other bodies. This cooperation may almost be called essential both in making the preliminary arrangements for the course and in stimulating attendance once the course is arranged.

Cooperation from the local chapter is partly altruistic, but records show that five per cent of the men enrolled in any Keller course join the A.S.S.T. as regular members. The benefits accruing to the other organizations arise from the wider spread of knowledge about the fabrication and treatment of steel. This greater knowledge pays dividends at one time or another. The Society is grateful to every cooperating group.

## TERRIBLE NEWS—WE'RE RICH

A Milwaukee Newspaper printed these sentences the other day: "Last month American industries paid \$475,000,000 in dividends. A year ago last month they paid out \$339,000,000. Net gain over a year ago, \$136,000,000. Business is certainly in terrible shape. Let's all get together and have another good cry."

Further comment superfluous.

## THIS PLEASED US MIGHTILY

One of the most genuine tributes to *Metal Progress* was expressed on the back of a penny post card sent to the National Office. A member from Massachusetts wanted to receive certain of the bulletins listed on the page "Helpful Literature for the Asking" printed in the October issue. Instead of using the coupon printed for the purpose, he listed the desired bulletins on the card, writing "You have made *Metal Progress* so that we don't want to tear it."

His appreciation made the day bright.

## INFORMATION WANTED

Information as to where new things are being done in the metal fields, and who does them, is always welcomed by the Society. Convention programs, *Metal Progress* and *Transactions* are all eager for reports of new developments. Members can be of great service to their Society by keeping national headquarters informed about such news.

It hardly seems necessary to mention the advantages in which every member shares when *Metal Progress*, the convention programs and *Transactions* are full of the latest events of the metal world. Those in charge of these various activities are constantly on the alert, but even at that they can use information from every member.

Be sure that every worth-while lead will be followed. The A. S. S. T. tries not to miss any news in the fields it covers.

A.S.S.T.  
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CommitteesFINANCE COMMITTEE  
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American Society of Mechanical Engineers, Engineering Index—F. F. Lucas.

Metallurgical Committee, American Gear Manufacturers' Association—John T. Howat.

TELLS USE OF IRON-CARBON  
DIAGRAM IN HEAT TREATING

Henry Wysor Speaks at Buffalo

By Charles F. Wahl

On Thursday evening, September 18, the Buffalo chapter, American Society for Steel Treating, held the first regular meeting at Hotel Buffalo with thirty-three present at dinner and about sixty members and guests at the meeting.

The speaker of the evening was Henry Wysor, metallurgical engineer of the Bethlehem Steel Company, Bethlehem, Pa., who spoke on "Heat Treatment of Steel."

Mr. Wysor explained with the aid of charts and slides, the Iron-Carbon Diagram. Iron and steel undergo thermal changes at different temperatures, at which steels of varying carbon content solidify and the temperatures at which their critical points occur. The cause and effect of heat treatment is to visualize the thing we want to know.

The Metcalf test is a simple way to show the effect of heating for grain structure, resulting from varying temperatures on a single bar of steel.

Mr. Wysor's talk was well illustrated with charts and micro-photographs. A very interesting discussion followed.

## American Society for Steel Treating

## BALANCE SHEET

As of September 30, 1930

## ASSETS

CASH		
Petty Cash Fund .....	\$ 250.00	
Cleveland Trust Co. (Commercial Acct.) .....	4,128.22	
Savings Accounts .....	52,721.42	
		\$ 57,099.64
SECURITIES		
U. S. Government Bonds .....	\$ 27,689.70	
Other Securities .....	106,255.38	
Accrued Interest .....	1.39	
		133,946.47
Accounts Receivable .....	\$ 14,145.08	
Less—Allowance for Doubtful Accounts ..	255.63	
		13,889.45
Inventory .....	10,966.33	
Travel Advances .....	8,093.68	
Insurance Premiums Prepaid .....	497.40	
Office Furniture and Fixtures .....	5,900.84	
Western Metal Show Deferred Expense ..	2,478.71	
1930 Convention Deferred Expense .....	44,679.98	
Total Assets .....		\$277,552.50

## LIABILITIES, RESERVES AND SURPLUS

Accounts Payable .....	\$ 521.13	
Reserves .....	51,761.19	
1930 Convention Deferred Income .....	84,159.90	
Western Metal Show Deferred Income ..	2,075.00	
SURPLUS		
January 1, 1930 .....	\$160,188.06	
Plus—Excess Income over Expense during period from Jan. 1 to Sept. 30, 1930 .....	13,333.22	
		\$173,521.28
Less—Reserve set up for Development .....	\$ 30,000.00	
Adjustments for old accounts .....	11.00	
Loss on Bonds, written off .....	4,475.00	
		34,486.00
		139,035.28
Total Liabilities, Reserves and Surplus .....		\$277,552.50

## American Society for Steel Treating

## UNAUDITED INCOME AND EXPENSE STATEMENT

For the period from January 1 to September 30, 1930

## INCOME

Membership Dues .....	\$ 64,465.74	
Sustaining Exhibit Memberships .....	4,075.00	
		\$ 68,540.74
Less—Apportionment of Dues to Chapters .....	28,097.02	
		\$ 40,443.72
Transactions—Advertising .....	\$ 39,421.10	
Subscriptions .....	2,053.46	
Sales .....	813.51	
Reprints .....	1,070.60	
Bindery .....	1,053.00	
		44,411.67
Books Purchased .....	1,167.22	
General Index .....	17.40	
Books Published .....	2,669.81	
National Metals Handbook .....	8,763.10	
Extension Division .....	4,052.00	
Interest Earned .....	\$ 3,641.42	
Interest Earned—H. M. Howe Medal Fund ..	61.98	
Discount Earned .....	761.15	
Sundry Income .....	246.86	
		4,711.41
Total Income .....		\$106,236.33

## EXPENSE

Support of Chapters .....	\$ 631.26	
Metal Progress Reserve Expended .....	\$ 23,638.81	
Transactions .....	31,508.47	
The Review .....	1,870.86	
Reprints .....	809.46	
Bindery .....	834.96	
Books—For Library .....	160.41	
Purchases for Resale .....	886.03	
Books Published .....	4,282.07	
National Metals Handbook .....	9,509.79	
Pencils, Pins and Buttons .....	182.50	
Extension Division .....	2,090.37	
1930 Convention Deferred Expense .....	\$ 44,679.98	
Western Metal Show Deferred Expense ..	2,478.71	
Semi-Annual Meeting .....	1,228.17	
National Committees—Recommended Practice ..	\$ 2,753.53	
Finance .....	248.57	
Publication .....	884.33	
		3,886.43
Directors .....	3,201.99	
President's Office .....	1,039.41	
Treasurer's Office .....	5,263.56	
Secretary's Office .....	16,522.58	
General Expense .....	8,994.79	
Total Expense .....		\$ 92,903.11
Excess Income Over Expense .....		\$ 13,333.22

## MAHIN NOTRE DAME SPEAKER

Says Microscope, X-ray and Base

Metals Advance Metallurgy

By C. D. Carr

The first meeting of the Notre Dame group year was held on Thursday, October 9th. The group was addressed by E. G. Mahin, professor of metallurgy, at Notre Dame University, who indulged in reminiscences of his early experiences as a student of metallurgy, stressing the remarkable development of the science since that time, which has been made possible by increased interest in the scientific aspects of metallurgy, and in the development and refinement of apparatus for both laboratory and plant.

The opinion was expressed that three items of material equipment have been outstanding as contributing to such progress. These were stated to be the metallurgical microscope, X-ray equipment, and the base-metal alloys suitable for use as thermoelectric pyrometers and as resistors for electrically heated furnaces.

## SYRACUSE HEARS C. W. MASON

Cornell Professor Demonstrates Grain

Growth of Metals Interestingly

By Grover C. Farnsworth

The Syracuse chapter held its first fall meeting upon October 21, at the Onadaga Hotel, and about 100 members and guests were present. The speaker of the evening, was C. W. Mason, assistant professor of chemical microscopy from Cornell University, Ithaca.

His subject was "Close-Ups of Metals" and with the aid of a microscope he showed in a novel way the grain growth of metals.

He took metals and heated them, placed them on the microscope and projected the enlarged views upon the screen, thus showing what takes place while cooling. Everyone present was very much interested in the way Professor Mason discussed the subject.

At the next meeting of the Syracuse chapter, to be held December 3, Dr. J. A. Mathews is scheduled to deliver an address on recent progress in the field of tool steels.

## CLEVELAND, CANTON-MASSILLON CHAPTERS IN AUTOMOTIVE MEETING ON OCTOBER 13TH

Plant of White Motor Co. in Cleveland Visited During  
Day; White Co. Metallurgist Speaker in Evening

By W. E. Benninghoff

In the afternoon of October 13th, about 75 members of the Cleveland and Canton-Massillon chapters made an inspection trip through the White Motor Co. plant in Cleveland. They visited the engine building, rear axle, engine testing, gear cutting, inspection and other departments, as well as the physical and chemical laboratories. The groups then gathered in the heat treat department where specific details were discussed, and samples shown of the various kinds of work and heat treatments.

About 50 men then attended the dinner at Kaase's in Carnegie Hall, where David Dietz, science editor of the Scripps-Howard newspapers, gave a very interesting coffee talk on "Science in Modern Life." He not only told what science has done for modern life, but outlined what the trend might be in the coming century.

At the evening meeting in the Engineering Society rooms in Carnegie Hall, called to order by Chairman Ayling, C. W. Simpson, metallurgist of the White Motor Company, discussed "Materials for Severe Automotive Duty" before 100 members and guests. The speaker first outlined the procedure of putting out a new model or change in design, going through the processes of design, mathematical analysis of design, selection of materials and heat treatment. An experimental unit is then built, and operated to destruction, if possible, and then changes made to the design according to the results obtained.

Since all parts of the White trucks and busses are manufactured in their own plant, an exceedingly large variety of steels, bronzes, babbitts, etc., are required. Mr. Simpson told how these different materials are selected, stressing availability of material desired, stock sizes, commercial producibility, cost of raw material, machinability, etc.

The selection of steels for gears, rear axles, and brake drums was specifically discussed along with their heat treatment. Also, the several SAE steels were discussed, and where and why they were used in truck manufacture.

Mr. Simpson then outlined some of the many duties of a competent metallurgist, which included specification of materials and their heat treatment, testing, approving sources of supply, co-operation with the inspection department, solving field problems, testing of "pirate" parts, design and research on new materials.

At the conclusion of Mr. Simpson's talk, the meeting was thrown open for discussion, when questions were asked on the design and heat treatment of specific parts, such as piston pins, steering knuckles, rear axle housings, etc.

Before adjourning, a prize drawing was held for members and guests present. The prize for members was won by P. J. Gygi and for guests by A. C. Landstrom. The prizes consisted of half a year's dues in A. S. S. T.

## \$17,500 IN PRIZES OFFERED IN CONTEST ON ARC WELDING

Lincoln Electric Co. Sponsor

Designers and engineers in every industry, where iron and steel forms all or a part of the manufactured product, are again given the opportunity by the Lincoln Electric Co., Cleveland, O., sponsors of the second Lincoln arc welding prize competition, to show their skill and ingenuity in utilizing the advantages of arc-welded construction. As a reward for their efforts \$17,500.00 will be awarded for the forty-one best papers submitted in the competition.

In announcing this competition, the second of its kind, the sponsors are establishing a biennial competition which should be welcomed by industrial engineers and manufacturing executives throughout the world. The purpose of this competition, as announced by its sponsors, is to stimulate designers and engineers in every line of industry to think of the manufacture of their own products by the use of arc welding and to increase their knowledge.

The forty-one prizes, to be given by the Lincoln Electric Co. to the winners as selected by the Jury of Awards, are: for the first prize paper, \$7,500; for the second prize paper, \$3,500; for third prize paper, \$1,500; for fourth prize paper, \$750; for fifth prize paper, \$500; for sixth prize paper, \$250; and for the seventh to forty-first prize papers, \$100 each.

The competition as announced will be open to any person in the world except the employees of the sponsors. The closing date for the competition will be October 1, 1931. Other details of the rules of the competition are expected to be announced shortly.

## 125 BOSTONIANS AMUSED AT CHAPTER'S ANNUAL BANQUET

Sports Authority Gives A Talk

By H. E. Handy

Commencing its 11th season with an attendance of 125 members and guests, Boston chapter held its annual banquet and smoker at the University Club, Boston, on October 3. Dr. George B. Waterhouse, chairman of the chapter, presided.

One of Henry Doyle's famous steak dinners was served at 6:30 P. M., music and songs being furnished by the Hawaiian String Ensemble and the Rhythm Boys' Quartet. Following dinner, H. E. Handy reported the results of the meeting of the National Nominating Committee held in Chicago during Convention Week and E. B. Ashworth outlined the program for the coming months. Vice-Chairman Bach introduced the entertainers who preceded the guest speaker.

"Bill" Cunningham, sports editor of the Boston Post, and one of Dartmouth's All-American football centers, spoke to the assembly for almost two hours. Bill has had a lot of experience in both the military and sporting worlds and his anecdotes, both humorous and serious, were greatly enjoyed.

Arrangements for the evening were under the direction of the following committee: E. B. Ashworth, chairman; A. D. Bach, entertainment; E. L. Bartholomew, dinner; E. N. Downing, reception; Maurice Winn, attendance.

## CHAPTERS TO O. K. NEW MEN

Chapter Membership Committees to Pass on A. S. S. T. Membership Applicants

A meeting of the Board of Directors of the A. S. S. T., held September 21st, 1930, in Chicago, made certain revisions of the application blanks for new members, to fulfill provisions of the Constitution.

The two important changes on the application blank are first, that information is requested concerning education and experience, and two references; and secondly, on the bottom of the blank a form has been provided for the chapter to fill out to indicate that the application has been referred to the membership committee and that the applicant was elected to membership at a regular meeting of the chapter's executive committee.

Application blanks must be signed by both the chapter's chairman and secretary before being sent into the National office. Provision for such action had long ago been written into the Constitution.

P. A. E. Armstrong, consulting metallurgist and member of the New York chapter, has announced the removal of his office to 521 Fifth Avenue, New York.

## DECEMBER METAL PROGRESS TO SHOW CHRISTMAS SPIRIT

Due respect for the Christmas season will be observed in the December issue of Metal Progress. The cover design is built around a motive of metal toys, and one of the featured stories concerns their manufacture.

Not so Christmas-like is the story on high frequency induction furnaces by J. A. Succop. The author discusses the utility and limitations of such furnaces for steel melting purposes. A description of a model heat treating department, covering that equipment and the methods used, has been written by N. MacNeil. The plant discussed is a machine company in Massachusetts.

J. C. Weaver has contributed an article on "pickling" which will introduce a series he is preparing exclusively for Metal Progress on this important subject. A staff article on tantalum, one of the newer and not so well known metals, will also appear.

A new method for determining the deep drawing quality of thin steel plate is described in an article on deep draw-

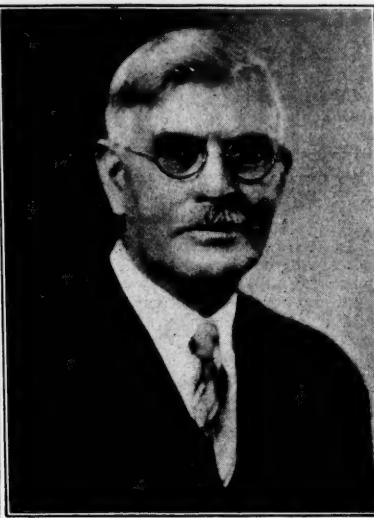
ing by H. T. Morton. The article covers in a comprehensive manner the kind of metal necessary for deep drawing operations.

The rigid tests which are given gear steels for automobile transmissions are the subject of another article. The various tests are described in detail. V. O. Homerberg and J. P. Walstead have collaborated in an article on the wear resistance of a nitride case which will also be given in the December Metal Progress.

The Recommended Practice Committee of the A. S. S. T. has just released a survey of the welding fields which has been prepared for the next edition of the National Metals Handbook. F. T. Llewellyn, well known in welding, is the author.

Other equally interesting articles on metal topics will be printed and many pages, of course, of letters from foreign and domestic correspondents. The December issue will make its appearance shortly after the first of the month.

John F. Keller



"The learned blacksmith" is what many call Prof. John F. Keller, of Purdue University, who conducts the courses of extension lectures on iron and steel which he presents under the joint auspices of the A. S. S. T. and Purdue.

## STAINLESS STEELS TOPIC AT DAYTON

E. R. Johnson Names Four Types

By G. R. Long

The October meeting of the Dayton chapter was featured by a talk by E. R. Johnson, chief metallurgical engineer of the Republic Steel Corp. on the subject of "Stainless Steels."

A brief summary of the history and patent situation in stainless steels introduced the talk. Development was laid to the automotive, building, dairy, and petroleum industries especially in the automotive field where high standards have forced improvements which have been of value to all users of stainless steels. The stainless irons and steels were divided into four groups as follows:

- Type 1. 10-14% chromium.
- Type 2. 15-30% chromium.
- Type 3. 16.5-20 Cr and 7-10 Ni with Si, Mo, W, etc.
- Type 4. Those containing Cr and Ni with Si, Mo, W, etc.

Each of these types was then discussed in its relation to three classes of corrosive conditions. (1) atmospheric corrosion, (2) wet (acid and liquid) corrosion, and (3) dry scaling corrosion at elevated temperatures. For atmospheric and wet corrosion corrosion types 1, 2, and 3 find use. For elevated temperatures type 4 is usually preferred along with the higher chromium contents of type 2.

Each type was taken up in detail, the most usual analyses being given along with its physical properties, best heat treatment, welding and soldering characteristics and applications where that type has been most useful. Polishing and forming were discussed. Carbide precipitation, its effects, and manner to avoid obtaining it also came into consideration.

After the talk a series of slides was exhibited showing parts of the fabrication processes, examples of various applications, and some defects which could have been prevented. Following this the speaker answered quite a number of questions and exhibited several samples of interest.

Mr. Johnson's talk was one of the best and most helpful lectures which the Dayton chapter has had the privilege of hearing.

## INDIANAPOLIS HEARS DAVIS Talk on Furnaces and Heat Treating Methods Provokes Keen Discussion

By Wm. H. Knowles, Jr.

E. F. Davis, metallurgist of the Warner Gear Co., Muncie, Ind., spoke before the Indianapolis chapter on Monday, October 6, on "Modern Furnaces and Heat Treating Methods." This talk was illustrated with various slides showing continuous type furnaces and automatic control equipment at the Warner Gear Company. The talk brought forth much discussion among the members as to the relative merits of various hardening and annealing methods.

A drive for new members is to be shortly instituted by the Chapter and it is hoped that our personnel will be increased both in Indianapolis and in neighboring towns.

## ARCHER TALKS ON ALUMINUM BEFORE 93 BUFFALO MEMBERS

Describes Metal's History, Uses

By C. F. Wahl

The regular monthly meeting of the Buffalo chapter was held Thursday, October 23, at Hotel Buffalo, and was preceded by dinner.

Chairman H. J. Cutler called the meeting to order and introduced the speaker of the evening, R. S. Archer, metallurgist of the Aluminum Company of America, Cleveland, who spoke on "Aluminum."

Mr. Archer gave an interesting talk on the early history and development of aluminum. In 1825 the price was \$10.00 per pound, but due to the Hall Process, the price is now less than twenty-five cents per pound.

Pure aluminum is one-third its weight of steel. The outstanding properties are the lightness of weight and resistance to corrosion. Aluminum alloyed with copper, silicon or manganese will increase the strength and hardness and also the casting qualities. It is used extensively in structural and architectural applications.

Mr. Archer's address was illustrated with the aid of lantern slides and photomicrographs. An interesting discussion followed. The meeting adjourned with a hearty applause for the speaker.

About 93 members and guests were present.

## PHILADELPHIANS PLAY GOLF

Prizes Won by Joseph Castle, G. W. Tall, Jr., E. B. Estabrook and Wm. Buechner

A fanfare of clubs and a balmy October seventeenth marked the opening of another successful innovation for the Philadelphia chapter. Twenty-two enthusiasts for the great open spaces spent a splendid afternoon away from their desks and microscopes knocking the live rubber ball down the fairway and into the bunkers, thoroughly forgetting that "18 & 8" by any other name is the same puzzle.

The links of the Cedarbrook Country Club were the scene of this affair. Joseph Castle, turning in a gross score of nine above par, cinched the first prize. G. W. Tall, Jr., and E. B. Estabrook split the honors for the handicap prize, while Wm. Buechner won the "Kickers" handicap.

A dinner at the Club House marked the close of a very pleasant afternoon, at which time it was resolved to give all another chance when the leaves turn green again and one needs to have the cobwebs cleared from a tired brain. Perhaps a match with our neighboring chapters will be in order—who knows?

## KETCHAM JOINS WISCONSIN AXLE

The Wisconsin Axle Co. announces the appointment of Wm. J. Ketcham as chief metallurgist in charge of their laboratory at Oshkosh, Wis. Mr. Ketcham is a graduate of Michigan State University, and a member of the A. S. S. T.

He was formerly assistant to H. W. McQuaid, chief metallurgist of the Timken-Detroit Axle Co., and was also associated for a number of years with the metallurgical department of the Timken Roller Bearing Co. at Canton, Ohio.

## THAYER REPUBLIC CHIEF ENGINEER

R. J. Wysor, vice president in charge of operations of the Republic Steel Corp., has announced the appointment of C. A. Thayer as chief engineer for the corporation, with headquarters at Youngstown. Mr. Thayer has had long experience with large steel and engineering companies. His most recent connection was with Arthur G. McKee & Co. as chief engineer for that company's project for building a huge steel works in Russia. From 1920 until early in the present year Mr. Thayer was chief engineer at the Gary Works of the Illinois Steel Co.

## 1931 CHICAGO YEAR IS WELL UNDER WAY

Attendance at First Two of  
Season's Meetings Over 500

By Harry Hardwicke

The pre-convention meeting was held by Chicago chapter September 11, as the opening of the fiscal year. The principal speaker of the evening was W. H. Wills, metallurgist, Ludlum Steel Co., Dunkirk, N. Y., whose subject was "Satisfying Tool Steel Customers." There were approximately 125 present for dinner and the total attendance was about 250.

Mr. Wills had prepared an excellent paper which carried his audience through the manufacture of tool steels, their inspection at the mill, the selection of suitable steel for the particular job and up to and including the solution of the customers' problems encountered in using tool steels. A high point of his talk was his resumé of the many types of tool steels available today, together with his ideas based on years of laboratory research and practical experience as to the proper use of each type. The paper was illustrated with very excellent photomicrographs, as well as photographs of the tools themselves, showing different types of troubles encountered by tool steel users.

F. C. Wheeler, production manager for the Miehle Printing Press and Manufacturing Co., Chicago, served as technical chairman for this meeting and led the discussion which followed Mr. Wills' talk.

Following the regular dinner and preceding Mr. Wills' paper, the members in attendance were edified by the first showing of motion pictures of last year's Annual Outing of Chicago chapter. Many of those present were able to recognize themselves in the fast moving scenario that was spread out in pictures before them.

On October 9, 1930, the second meeting of the year was held featuring a talk on drop forging by A. M. Steever, metallurgist, Great Lakes Forge Co., Chicago. Attendance at this meeting was equally as large as that of the first meeting of the year and augurs well for a very prosperous year for Chicago chapter. This is the first meeting that Chicago chapter has devoted to Drop Forging and it was very interesting and gratifying to see the response it received from the membership. It has been a long time since we have witnessed such a spirited discussion as was brought out by the technical chairman, Harold F. Wood, metallurgist, Ingalls-Shepard Division, Wyman Gordon Co., Harvey, Ill.

Mr. Wood was chosen as technical chairman because of his intimate knowledge of the life and works of the speaker, Mr. Steever, and some place in his introduction he referred to an episode which happened in Mr. Steever's varied career, purporting to have Mr. Steever driving an automobile sedan into the lobby of the Statler Hotel, Detroit. Mr. Steever's rebuttal was typical when he explained that the techni-

Continued on Page Six

## EUROPEAN STEEL MANUFACTURE COMPARED WITH U. S. PRACTICE

Tri-City Men Hear Jordan Korp

Jordan Korp, metallurgical engineer of the Leeds and Northrup Company, Philadelphia, addressed the Tri-City chapter of the American Society for Steel Treating on the principles of heat treating at their meeting, Oct. 7, at the Davenport Chamber of Commerce.

The speaker, with many years of practical experience and a broad knowledge of American and European heat treating practice, told in simple language of the proper methods to use in hardening steel. Slow uniform heating, proper quenching temperature in a carefully controlled medium and a proper knowledge of underlying metallurgical laws were stressed as essential.

Mr. Korp recently completed a tour of European countries. He found, with one exception, that European steel treating practice and technique was below the average American practice. The one exception was the Krupp works in Essen, Germany. Here he found the most conscientious attention to all details and rigid adherence to specifications. Elsewhere in Europe Mr. Korp found that one of the outstanding troubles had by steel treating departments was their inability to obtain steels within a narrow range of chemical analysis. The steel treaters have to take what the steel makers supply while the United States steel makers supply steel within narrow ranges of analysis.

The December meeting of the Tri-City chapter will feature a talk by F. R. Palmer, of the Carpenter Steel Co.

## BEARING PROBLEMS INTEREST HARTFORD

Lubrication Facts Presented  
In Talk by L. H. Nielsen

By J. Allison

The Hartford chapter held its first monthly meeting of the year on Oct. 14th at the Hartford Electric Light Co. auditorium. L. H. Nielsen of the technical staff of the Vacuum Oil Co. in his address, "Bearings and their Lubrication," gave a thorough review of the principles and methods of lubrication, both of plain bearings and of anti-friction bearings. He covered the principle of the lubricating oil film and wedge, the formation and maintenance of lubricating oil film, methods of application and the selection of lubricants.

The speaker stressed the importance of chamfering the oil grooves of a plain bearing in the direction of the rotation of the shaft. Oil grooves should be placed about 30 to 45 degrees in front of the point of greatest pressure and the number of these grooves should be as small as possible. Criss cross and fancy oil grooves tend to lead the oil from the points at which it is needed and also they reduce the effective area of bearing surface. As the pressure increases more points of application of the lubricant must be provided.

Roller bearings are lubricated to protect the high polish and lubricate the rollers. Only enough lubricant is required to reach the level of one-half the height of the ball or roller at the bottom of the bearing.

Tapered bearings act as centrifugal pumps. The large end should be placed on the inside to pump the oil away from the packing and a groove should be provided to return the oil to the small end of the bearing.

To minimize fluid friction, the oil used should possess the lightest body that will maintain, with safety, a complete film under existing conditions of load, speed, and temperature.

At the close of the address A. M. Drake, assistant master mechanic of Pratt & Whitney Co., who served as technical chairman, led an illuminating discussion on applications of various lubricants. The discussion brought out the following points. Gunning of oils is due to the presence of animal oils or undissolved hydrocarbons which are oxidized by high temperatures or by churning. Watches require porpoise oil which sells for seventy-five dollars per gallon as it is the only lubricant which will give a satisfactory low pour test, absence from creep, and low oxidizing value. Air compressors require very little oil for the cylinder walls and light vaporizing oils will make explosive mixtures with the compressed air.

H. J. Fischbeck, chairman, gave a short talk on the convention and announced the nomination of A. H. d'Arcambal as vice-president of the society.

The next meeting will be held Nov. 11th, at which Robert M. Keeney of the Connecticut Light and Power Co. will speak on the "Source of Heat for Heat Treatment," an impartial discussion of the relative merits of oil, gas and electricity as fuels for heat treatment.

Announcement has also come from the Connecticut Manufacturer's Association that it is sponsoring a course of twenty lectures and laboratory periods beginning about the first of November on "Electro-Plating." The instructor for the course is Edson L. Wood, metallurgist for Landers, Frary and Clark, and last year's chairman of the Hartford Chapter. The course will be held at the Weaver High School building.

R. A. Schoenfeld has been appointed as Sales Engineer with headquarters in the Chicago district office of the Hevi Duty Electric Company, Milwaukee, Wisconsin. Mr. Schoenfeld for the last seven years has been Sales Manager of Claud S. Gordon Company of Chicago.

## INTERESTING INDUSTRIAL PUBLICATIONS

The Calorizing Company, Wilkinsburg Station, Pittsburgh, has published an attractive booklet illustrating the various applications of its product, Calite, a heat resisting alloy.

"X-Ray and the Foundries" is a booklet which may be obtained from the Kelley-Koett Manufacturing Company, Covington, Ky. The booklet explains briefly processes of radiography as applied to castings and welding.

A new automatic polishing machine, manufactured by the Chemical Rubber Company, West 112 Street and Locust Avenue, Cleveland, is described in circulars which may be obtained from that company.

A booklet discussing P. B. Sillimanite ramming mixture for the construction and repair of monolithic furnaces, may be obtained from the Charles Taylor & Sons Company, Cincinnati.

Bulletins 10, 11 and 16 of the Thwing Instrument Company, 3339 Lancaster Avenue, Philadelphia, discuss the various types of pyrometers made by that company. The booklets have been bound together in an attractive cover.

The big billet shears manufactured by Henry Pels Co., 90 West Street, New York, are illustrated and described in a new catalog, FV-1930, recently published by Pels & Company.

A new leaflet on Brown Indicating, Recording and Automatic Control Pyrometers has just been issued by the Brown Instrument Company, Philadelphia.

## WESTERN SHOW EXHIBITORS

Continued from Page One

The list as of Oct. 20th, 1930, is as follows:

Air Reduction Sales Co.	New York
Am. Car & Foundry Co.	New York
Am. Gas Furnace Co.	Elizabeth
C. B. Babcock & Co.	San Francisco
W. O. Barnes Co.	Detroit
Bausch & Lomb Optical Co.	Rochester
Bethlehem Steel Co.	Bethlehem
Bethlehem Steel Corp.	Bethlehem
Black & Decker Mfg. Co.	Towson, Md.
Rotfield Refractories	Philadelphia
Bristol Co.	Waterbury
California Saw Works	San Francisco
Carborundum Co.	Niagara Falls
Carborundum Co.	Perth Amboy
Chicago Steel & Wire Co.	Chicago
Clark Tractor Co.	Battle Creek
Cleveland Twist Drill Co.	Cleveland
Crucible Steel Co. of Amer.	New York
Earle M. Jorgensen Co.	Los Angeles
Firth Sterling Steel Co.	McKeesport
Fuels & Furnaces	Pittsburgh
Fusion Welding Corp.	Niagara Falls
Globe Corp.	Detroit
Goddard & Goddard Co.	Detroit
Halcomb Steel Co.	Syracuse
Hall-Scott Motor Car Co.	Berkeley
E. F. Houghton & Co.	Philadelphia
International Nickel Co.	New York
James H. Knapp Co.	Los Angeles
Johnson Gas Appliance Co.	Grand Rapids
Leeds & Northrup Co.	Philadelphia
E. Leitz	New York
Lincoln Electric Co.	Cleveland
Linde Air Products Co.	New York
Manison Steel Co.	San Francisco
C. W. Marwedel	San Francisco
Merco Nordstrom Valve Co.	San Francisco
Minneapolis-Honeywell Co.	Minneapolis
Norton Co.	Worcester
Pacific Abrasive Supply Co.	Los Angeles
Pacific Coast Gas Assoc.	San Francisco
Pacific Steel Corp.	San Francisco
Pacific Foundry Co. Ltd.	San Francisco
Pacific Gear & Tool Wks.	San Francisco
Pacific World	San Francisco
Republic Steel Corp.	Massillon
Riehle Bros. Test. Mach. Co.	Philadelphia
Shell Oil Co.	San Francisco
Spencer Turbine Co.	Hartford
Spindler & Sautpe	San Francisco
Standard Oil Co. of Calif.	Los Angeles
Standard Tool Co.	Cleveland
Steel Publications, Inc.	Pittsburgh
Stoddy Co.	Whittier, Cal.
Surface Combustion Co.	Toledo
Timken Steel & Tube Co.	Canton
Victor Welding Co.	Los Angeles
Warner Engineering Co.	Los Angeles
Western Drop Forge Co.	Vernon, Cal.
Western Machinery World	San Francisco
Wilson-Macaulen Co.	New York
Carl Zeiss, Inc.	New York

## Employment Service Bureau

This bureau is for all members of the Society. Want ads will be printed at the following rates: minimum of 30 words \$0.50; each additional word \$0.02.

This service is also for employers, whether members of the Society or not. Rates for this service are as follows: minimum of 50 words \$1.00; each additional word \$0.02. Fee must accompany copy.

Address answers care of AMERICAN SOCIETY FOR STEEL TREATING, 7016 Euclid Ave., Cleveland, unless otherwise stated.

### POSITIONS OPEN

**SALES MANAGER:** Middle west; long years' experience in the tool steel trade and good connections among middle west users and distributors essential; Chicago resident preferred; write fully, giving references. Address 12-5.

**FOREMAN:** Heat treating, experienced man for managing Chicago production heat treating department. Practical experience in tool hardening, carburizing, heat treating essential; must have thorough knowledge of various processes, equipment, steels, materials used. Only A-1 men need apply. Give full details of age, education, experience, where and length of time employed, in what capacity and salary expected. Address 12-10.

### POSITIONS WANTED

**WANTED:** Opportunity to use technical training, six years' ferrous and nonferrous metallurgical experience, and willingness to work, for some one who wants the solution to problems rather than why they can't be solved. Casting, rolling and fabricating experience. Married, now employed. Write for details of training and experience. Address 12-15.

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## STEEL, ALUMINUM WORCESTER TOPICS

First Two Meetings of Season  
Instructive and Interesting

By R. C. Jordan

The first meeting of the year was held in September at Rebboli's restaurant. Prof. Coonan from Holy Cross College gave a very interesting and instructive talk on the principles of heat treating and explained in everyday language some of the reasons why steel responds to heat treatment.

Prof. Coonan's talk was placed first on the year's program in order to assist those most interested to better understand the more technical discussions which might be heard at some of the later meetings.

The October meeting was also held at Rebboli's restaurant with about thirty-five at the dinner and forty at the lecture which was illustrated with lantern slides.

Mr. Kempf from the Research Laboratories of the Aluminum Company of America talked on the subject of aluminum. His subject was "Progress in Aluminum" and covered briefly the history of aluminum which was followed by a discussion of commercial alloys, including recent developments.

The most striking progress discussed by Mr. Kempf was in the recently developed aluminum alloys which may be effectively heat treated in such a manner as to produce the same percentage increase in tensile strength and other physical properties, as may be accomplished by the heat treatment of alloys of steel.

## SCHEDULED 1930-31 PROGRAMS OF SOME OF THE CHAPTERS

Watch This List Grow!

<p>Buffalo Nov. 20—Stainless Steels Dec. 18—Deep Etching Jan. 22—Steel Castings Feb. 26—Metallography March 26—X-Ray April 23—Steel Manufacturing May—Inspection Trip</p> <p>Chicago Dec. 11—Stainless Irons and Steels Jan. 8—Automobile Steels Feb. 12—Ladies Night March 12—Industrial Research April 9—Recent Scientific Developments May—Inspection Trip</p> <p>Cincinnati Dec. 11—Die Casting Jan. 8—Carburizing Feb. 5—Nitriding March 5—Structural Alloy Steels April 5—Alloy Steels May 7—</p> <p>Detroit Dec. 22—No technical paper Jan. 12—Aircraft Metallurgy Feb. 9—Surface Hardening March 9—Cast Iron April 13—Tool Steels May 16—Ann Arbor Meeting</p> <p>Hartford Dec. 9—Super High Speed Steels Jan. 13—Electro Plating Feb. 10—The Abrasive Industry March 10—Welding April 14—Metallurgists in Industry May 12—Forgings</p> <p>New York Dec. 8—Plant Visitation, Laboratory of Union Carbide &amp; Carbon Corp., Long Island City Jan. 12—Metallurgical Problems of the Electrical Manufacturing Industry Feb. Meeting—Probably plant visitation to the International Nickel Company's new Research Laboratory March Meeting—Open April Meeting—Annual Smoker</p> <p>Ontario Dec. 5— Jan. 11—Bearing Metals Feb. 6— March 6—Steel Failures</p>	<p>April 10—Malleable Iron May 8— Pittsburgh Dec.—Jerome Strauss Jan.—Aluminum: Its Production Feb.— March—Casting Guns by Centrifugal Process April—Chrome Nickel Steels May—Nitriding</p> <p>Rochester December 8—Molybdenum Rockford Dec.—Stainless Steel and Irons Jan.—Automobile Steels Feb.—Tool Steel March—Research and Industry April—Forgings May—Tungsten-Carbide Tools</p> <p>Springfield Nov. 24—Nitriding Dec. 15—Arc Welding in Steel Structures &amp; Machinery Design Jan. 12—X-Ray Control of Welding and Casting Technique Feb.— March 23—Corrosion Resisting Steels April 20—Alloy and High Test Cast Irons May—Educational meeting</p> <p>Syracuse Dec. 3—Tool Steel Progress Jan. 13—Open Feb. 10—Stainless Steel April 14—</p> <p>Tri-City Dec.—Hardening of High Speed Steel Jan.—Special Smoker Feb.—X-Ray Analysis March—Pyrometers and Controls April and May—Tentative</p> <p>York Dec. 10—Stainless Steels Jan. 14—Tool Steel Hardening February 11—Elec. Furnace Heat Treatment March—Large Forgings April 17—Aircraft Metallurgy</p>
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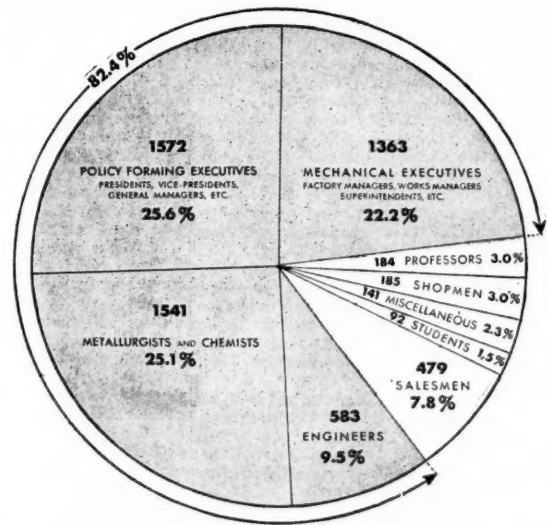
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## SOUTHERN TIER CHAPTER

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## NEW A. S. S. T. GROUP HAS BIG MEETINGS

York Attendance Big at First Two Meetings of 1931 Season

By A. W. F. Green

The first fall meeting of the York group was held at York on Sept. 10 in the rooms of the Engineering Society and was attended by 79 members and guests. The speaker of the evening was Dr. H. C. Boynton, metallurgist for the John Roebblings Sons Co., Trenton, N. J., who presented a splendidly illustrated lecture entitled "The Manufacture of Steel Wire". Four reels of motion picture, which depicted the making of steel wire, from the open hearth to the finished cable, as well as a number of uses for wire and cable, coupled with an exhibit of dies, etc., served to stimulate so much interest that the discussion which followed the paper proved of equal importance and value to all present.

The meeting held at Waynesboro on Oct. 15 was an overwhelming success, with representatives present from every city and town within the domain of the York group as well as a number from the Philadelphia chapter. Over 100 sat down to dinner in the Anthony Wayne Hotel after having visited the Landis Machine Co., Landis Tool Co., the Frick Co., and the Wayne Laboratories, all of Waynesboro. These visits were arranged for the group through the courtesy of the Manufacturers' Association of Waynesboro in cooperation with a committee in the group under the direction of James Morrison of the Landis Machine Co.

At the conclusion of the dinner Mr. J. Hartz, president of the Landis Tool Co., gave a short talk in which he detailed the history of Waynesboro's industries, which proved of interest since this thrifty community now boasts the second largest company in America manufacturing ice machinery—the Frick Co.; the largest plant of its kind manufacturing pipe threading and other die machines—the Landis Machine Co., and one of the largest manufacturers of grinding machinery—the Landis Tool Co. The Wayne Laboratories, one of the newest of Waynesboro's industries, stand out because of modernness and versatility embracing metallurgical, organic, bacteriological, geological and other phases of chemical work.

Following Mr. Hartz's talk more guests and members arrived, swelling the total to about 135, who listened to an account of the affairs of the group by George O'Neill, its chairman, and reports of committees of the group, followed by a paper entitled "Tool Steels" given by A. H. d'Arcambal, sales manager and consulting metallurgist for the Pratt and Whitney Co., Hartford.

Mr. d'Arcambal gave his talk with ample illustrations both through the use of lantern slides and by specimens and by presenting his subject in readily understandable language. A lively and pointed discussion followed his talk and when the meeting finally came to a conclusion, with the eating of delicious Pennsylvania-grown apples, everyone was ready to depart full of appreciation of an afternoon and evening spent educationally profitable and thoroughly impressed with the fact that the York group means business and will soon be asking for admittance as a chapter of the Society.

B. C. Palmer, special sales engineer for the Ohmer Fare Register Co., Dayton, Ohio, has been placed in complete charge of the Chicago branch of that company.

## TOOL STEEL INHERENTLY GOOD, REPORTS ROCHESTER SPEAKER

L. G. Marshall Addresses Meeting

By W. T. Morgan

The Rochester chapter commenced the 1930-1931 season with a well-attended meeting at the Powers Hotel on October 13th. After dinner, L. G. Marshall, metallurgist, North East Appliance Corp., Rochester, spoke on the subject, "Why Tool Steels Fail."

Much to the gratification of local tool steel salesmen, Mr. Marshall prefaced his talk with a tribute to the quality of modern tool steels made by reputable manufacturers. The speaker then delved into his twelve years' experience as a heat-treater to answer in detail the question as to why tool steels sometimes do fail, and how to avoid such failures.

Mr. Marshall is of the opinion that tool steels of today rarely fail owing to defects in the material as received, but mainly owing to improper selection, poor design, faulty heat-treatment or abuse in use. The evident interest of the audience was reflected in the subsequent discussion, when questions and answers swung to and fro until the "answers" had it, with everybody apparently well satisfied and much the wiser for such a well delivered practical talk.

## FIRST RHODE ISLAND MEETING ADDRESSED BY J. L. COULTON

Chapter Sponsors Metal Course

The first meeting of the season of the Rhode Island chapter of the A. S. S. T. was held in the rooms of the Providence Engineering Society, Wednesday, October 15.

The meeting was called to order when the chairman, Mr. Hacking, introduced Mr. Mowry, our former chairman, who told the chapter what progress had been made in the organization of a course in Heat Treatment and Metallography of Steel. This course is to be sponsored by the R. I. Chapter and will be conducted by the Engineering Department of Brown University as one of their extension courses. It is intended that the course shall consist of 15-20 lectures and laboratory periods combined once a week. Although this course is sponsored by the Chapter, it in no way supplants the regular chapter meeting programs which will continue as heretofore.

The main feature of the evening was Mr. J. L. Coultou of the Carnegie Steel Corp., who brought five reels of moving pictures covering the following subjects: Ore to Pig Iron; Pig Iron to Steel; Pipe Steel; The Butt-Weld Process; The Seamless Tubing Process.

These reels were very instructive as well as entertaining. There were 78 members and guests in attendance.

## CHICAGO MEETINGS REPORTED

Continued from Page Three

cal chairman was mistaken in the facts in the case; that he had not driven the car into the lobby of the Statler Hotel, but had been a passenger in the car. Furthermore it was his own idea.

His talk took us back to the very beginning of drop forging and by means of lantern slides showed the rapid development of this art to its present day standards; after which he talked for considerable time on metallurgical control of the raw material, as well as the finished forgings.

## NEW HAVEN LEARNS OF CHROME STEELS

F. R. Palmer Tells Effect of Chromium on Stainlessness

By R. T. Porter

The October meeting of the New Haven chapter was held in the auditorium of the Bristol Co. in Waterbury. A very interesting plant visitation was held at Seymour Mfg. Co. in the afternoon. This, by the way, is the first non-ferrous plant in the chapter's territory which has opened its doors for a plant inspection.

The dinner was held in the cafeteria of the Bristol Co. Music was furnished by an orchestra composed of employees of the company.

The chapter was very fortunate in securing Frank Palmer of the Carpenter Steel Co. to address them on stainless or non-corrosive steels. Mr. Palmer opened his talk with a very interesting blackboard talk, demonstrating the effects of the additions of carbon and chrome on the stainless properties of steels. Mr. Palmer spoke of the classification of the three types of stainless steels and placed them into three groups, A, B and C.

Group A analyzes chrome less than 14 per cent; carbon less than .40 per cent; they respond very well to heat treatment, are not brittle, not subject to grain growth, are readily forged, can be cold drawn or formed, make excellent cold rivets but not recommended for hot rivets, can be welded and are very satisfactory for resisting weather, water and many organic and inorganic corrodents.

Group B—chrome over 16 per cent and carbon less than .40 per cent. This group is naturally soft and heat treatment is not recommended; is not to be used in parts used under impact, can be forged, rolled or pierced, can be cold drawn into wire or formed, machines satisfactorily with properly designed tools, is not desirable for hot or cold rivets, can be welded and also possesses corrosion resisting properties higher than Group A.

Group C—contains besides the chrome enough nickel to make the steel austenitic and non-magnetic; does not respond to heat treatment; is extremely tough at all times; can be forged, rolled or pierced; will work harden when cold worked; it is very difficult to machine; is excellent for hot or cold rivets; can be welded; with chrome over 16 per cent the resistance is excellent and this group resists some types of corrosion that Group A and Group B will not.

This meeting was one of the largest the chapter has had in the past few years. Approximately one hundred men attended the dinner and the meeting.

## TELLS RESEARCH'S INDUSTRIAL VALUE

Dr. O. E. Harder Tells Detroit Metal Research Important

By O. W. McMullan

The first regular monthly meeting of the year of the Detroit chapter was held Monday, October 13, in the Fort Shelby Hotel. Dr. O. E. Harder, Assistant Director of the Battelle Memorial Institute spoke on the "Facilities for Metallurgical Research." Mr. J. M. Watson, National President-elect was Technical Chairman.

While the talk was mainly on metallurgical research, more general references were also made. Metallurgical processes were classed as one of the ten leading industries and that eight of the ten were dependent upon metallurgy in some way. Metallurgical research stands in second place as to the amount of money spent on it.

Research was divided into two groups: pure and applied science. Pure science of today becomes the applied science of tomorrow. The value of research was stressed, the statement being made that \$1.00 in research returns \$100.00 in revenue or reduced costs. Record of failures show that an automobile company cannot exist without metallurgical control.

The facilities for research include personnel, libraries, laboratories and equipment, and administration. Methods of carrying on research are by the fellowship plan, educational institutions, government laboratories, industry, and special laboratories. Technical society groups are engaged in codifying knowledge. Industry now contributes the largest share, 77 per cent of the papers at the Chicago Convention coming from industrial concerns.

Foreign research was mentioned and a large number of slides presented showing laboratories and their equipment.

## WASHINGTON HEARS ARCHER

Continued from Page One

hardener. Advantages of these Si alloys are the absence of hot shortness cracks or leaks and the presence of high fluidity, the higher Si, however, tending to cause internal shrinkage accompanied with less hot shortness. Cu may be added in small amounts to increase the ductility and strength.

The use of the various aluminum alloys for pistons was described, the advantages and disadvantages being shown for the different alloys applied in the various types of pistons. A comparatively recently developed piston alloy was described which could be used for any type of piston including the full trunk type. This alloy exhibits the various desirable properties necessary for a piston alloy, its only disadvantage being the necessity of machining with tungsten carbide tools. It is possible to forge this alloy, which is a distinct advance in piston production for such alloys.

The structural and architectural use of aluminum was shown to be gaining considerable recognition. It is now possible to fabricate aluminum alloys having a fifty to sixty thousand pound tensile strength with 18 per cent elongation and such alloys are being used for railway car sills, locomotive parts, and other applications. The decorative value of aluminum is being used in many different ways, its appearance sometimes being rectified through the use of anodic treatment with sulphuric acid, buffing, and various etching treatments. A number of slides were shown as well as an exhibit of a number of alloys illustrating the varied uses and appearances possible.

The application of aluminum for truck bodies, fences, paints, shingles, and numerous other articles only made it more obvious that the aluminum alloys are fast becoming more important in many new phases.

That Mr. Archer's presentation was thoroughly enjoyed became evident from the lively discussion and the number of questions that followed the talk.

## LEHIGH VALLEY MEN HOLD OPEN MEETING

Three Talks on Heat Treating Arouse General Discussion

By H. F. Paulus

In order to afford members of the Lehigh Valley chapter an opportunity to air their troubles in heat treating, the October meeting was an "open" affair. All of the speakers at this meeting in Reading, Pa., were members of the Lehigh Valley chapter. The theme of the evening was "Facts and Principles of Heat Treatment."

O. V. Greene presided, and introduced Prof. L. F. Witmer of Lafayette College, who gave an interesting talk on "The Iron Carbon Diagram and Fundamental Principles of Heat Treatment."

Mr. Luerssen then spoke on practical considerations in parts to be heat treated, covering heating for treatment, changes during heating, hardening and tempering. Since Mr. Luerssen's talk was of a practical nature, a great deal of discussion was aroused and many were the questions put to him by various members, each with his own peculiar problem. In general the discussion involved instances where the prescribed rules for heat treatment did not "work". A few cases were also mentioned where the "wrong" method of heat treatment gave best results. This discussion consumed over an hour and it was quite apparent that the various treaters had saved their "toughest" problems for this meeting. Needless to say, Mr. Luerssen answered questions put to him, in a very practical and satisfactory manner.

Mr. Weil finally had an opportunity to present his talk on "Carburizing". This talk, supplemented by slides, was also of a practical nature.

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